

A model for classroom management activities

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A MODEL FOR CLASSROOM MANAGEMENT ACTIVITIES

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Most studies on classroom management address the issue of restoring classroom order. Kounin (1970) describes several 'techniques' that distinguish good from poor classroom managers: 'overlapping', 'withitness', 'learner responsibility', 'group focus', and 'momentum'. Starting out from Kounin's concept a model for classroom management activities is developed and tested. Study 1 investigates the inter-relatedness of the two key concepts in the model ('overlapping' and 'withitness'). These concepts are strongly correlated. Based on this model a brief training program was designed. Study 2 reports the effects of the training program on teacher behavior. Study 3 reports the effect of this training program comparing two conditions: one group of teachers participating in the training program, and a control group not participating in the training program. The results of the studies show that the overall effects of the training program are small; some are significant.

Classroom management is described by Duke (1979) as the provisions and procedures necessary to create and maintain a situation in which learning and teaching can take place. When learning and teaching can take place, there is order in the classroom. Cohen, Intilli, and Robbino (1979) describe order as "the situation where there is a clear set of expectations for all classroom members, where people can anticipate expectations, and where there is a high degree of conformity to the expectations" (p. 118). We believe that Duke's (1979) provisions are incorporated into the description of Cohen et al. (1979). At the beginning of the school year, a teacher must put a lot of time and effort into establishing a set of clear expectations for all classroom members. During the school year, the amount of time

for this activity diminishes. With respect to Duke's procedures, these are activities that a teacher has to carry out when the situation calls for it, i.e., when someone does not conform to the rules. This is when the teacher must act. The provisions that teachers take are formulated (or can be formulated) in rules such as: *if I do....then I want you students to do....*; or, *if I do....then I do....*. To give an example: *if I want to start up the lesson, then I stand up and walk toward the blackboard and you'll be silent*, and, *if I walk toward the blackboard at the beginning of the lesson, then I want you to put your homework on your desks*. These examples are clear rules for both the teacher and the students. More difficult are "rules" like: *if you speak during the lesson, then you get punished*.

Although the rule is clear, it is difficult to apply. For example, do the students have to be silent during the whole lesson? Even when they are asked to answer a question?

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How are they punished? Always the same way? This constitutes a major problem: it is almost impossible to formulate a rule to prevent classroom disorder or to restore classroom order. The problem is: *if something happens, then what?* Of course, this question is academic for an experienced teacher, because he or she will act in some way or another as a response to that "something."

In this paper we introduce the notion of the teaching script, in which both instruction and classroom management are incorporated. First, however, the discussion focuses on "teaching as parallel processing." Second, we describe how teaching script and classroom management are related, and finally, we present the development of a training program on classroom management and review three experimental studies.

1 Teaching is Parallel Processing

Teaching is the parallel processing of classroom input and instruction. Processing of classroom input is important for classroom management.

Parallel processing is a concept borrowed from computer science to describe the process in which a task or several tasks are being performed, usually at the same time, by several microprocessors (Krajewski, 1985). The realization that the human brain performs many difficult cognitive tasks effortlessly led computer scientist to look into parallel architectures to imitate the capabilities of the human brain (Kumar, 1985). Teaching is a human activity, like so many others. McClelland, Rummelhart, and Hinton (1986) introduced the concept of *parallel distributed processing*, which assumes "that information processing takes place through the interaction of a large number of simple processing elements called units, each sending excitatory and inhibitory signals to other units. In some cases, the units stand for possible hypotheses about such things as letters in a particular display or the syntactic role of words in a particular sentence" (p. 10).

Sometimes hypotheses concerning whether or not an interruption of classroom activities should take, can be tested.

Teaching is also a parallel process. During teaching two different "processing systems" cooperate; the one system supports the execution of the teaching script, while the other system uses the input from the class to judge whether or not the class has reached a certain level (depending on several variables) that urges a teacher to execute classroom management procedures.

From serial processing to parallel processing

Among the first researchers who realized that classroom management was not just "serial" processing of information, meaning that instruction and classroom management are two alternating activities, were Shavelson and Stern (1981). As Clark and Peterson (1986) state, they base their model on the assumption that interactive teaching can be characterized as carrying out well-established routines. In their model, teaching and cue observation (management activity) are "processes in series." A major contribution of Shavelson and Stern, as Clark and Peterson formulate, is that they present "a model in which decision making during interactive teaching is portrayed as occurring when the teaching routine is interrupted" (p. 276). The Peterson and Clark (1978) model is another serial model in which processes alternate. A teacher teaches and then observes cues. When these cues are within tolerance, he continues; when not, he decides what to do, and whether or not he has to change his behavior.

Both the Shavelson and Stern model and the Peterson and Clark model should be revised on two points (Clark & Peterson, 1986): "First, a model of teacher interactive decision making should reflect the definition of interactive decision making as a deliberate choice of actions from several possible

alternatives. Second, a model of teacher interactive decision making should reflect the finding that the majority of teachers' reported interactive decisions are preceded by factors other than judgments about students" (p. 277).

In our view, both models have another shortcoming. Teachers do not make interactive decisions on what they do and how they should do things in the classroom. There is, of course, interaction with the class, but this is different. Teachers do both things at the same time, as if they have two (or more) different "processors." There is one "processor" carrying out teaching (or classroom teaching behavior, or the classroom teaching routine), and *at the same time*, the second "processor" carries out the "parallel" process of "cue observation." When the cues are within tolerance, classroom teaching is *not interrupted*; when the cues are not within tolerance, teaching is *interrupted*. Teaching, formulated in this manner, is a parallel pro-

cess, and as such conceptualized differently than in both the Peterson and Clark model and the Shavelson and Stern model.

2 The Teaching Script and Classroom Management

Van der Sijde (1987, 1988) stated that "teaching is a script based" activity, meaning that the teaching script is both a script for understanding and for behavior. We would like to elaborate briefly on this point of view. A teaching script is a representation of actions or activities which make up teaching, and guide a teacher in executing a lesson. Teaching is not a routine, but it is composed of a great number of activities which have been routinized as procedures (if <condition> --> then <action>). A study I conducted by Van der Sijde (1987) proposed that mathematics teachers utilize a script with five scenes, and formulated a number of specific procedures for each scene (see Table 1).

Table 1
Scene-specific instructional procedures

if (condition)	then (action)
Review of homework	.deal with all homework assignments .check all homework assignments
Presentation	.give a review of relevant concepts .refresh prior knowledge .use examples .indicate what is important and what is not
Monitored practice	.give a short, clear assignment directed to knowledge, understanding or application .check the assignment .react positively to the students
Guided practice	.give probes .redirect questions
Homework/Tutoring	.leave enough time at the end of a lesson to allow the students to start their homework .pay attention to students who need extra attention

If we look at the work of Kounin (e.g. 1970) and what he formulates as his key concepts of classroom management, "overlapping" and "withitness," we notice that those concepts do not lend themselves as easily to procedure as some of the instructional concepts shown in Table 1 and the provisions mentioned earlier in the paper. It is particularly difficult to produce the "if"-side of the statement; the "action"-side is clear:

<if> ? then <action> overlap
<if> ? then <action> be withit

What does this mean? It means that classroom management, although procedural knowledge, is not organized in a script in the same manner as instruction. We still can consider teaching a script based activity; classroom management, on the other hand, can be considered a "support system" for instruction as in the description of Duke (1979).

3 Instruction and Classroom Management

Classroom management should be divided into two components: prevention of classroom disorder, and restoration of classroom disorder. The restoration is often referred to as the disciplinary actions of the teacher. The prevention of classroom disorder can take place on two different levels: using managerial techniques, and using instructional techniques. In this paper we will not address the instructional techniques. It should be clear from the preceding, that instructional management is a scene-specific support system.

As mentioned earlier in this paper, Kounin (1970) introduced two key concepts for classroom management: overlapping and withitness. Overlapping is when a teacher does two or more things at the same time; he spreads his attention over different things. The parallel processing paradigm is incorporated in this definition. A teacher does two or more things at the same time, but the activities are connected; no teacher performs

two completely different, unrelated tasks simultaneously in class. Overlapping is the key concept in Kounin's work, as we interpret it. The second concept, withitness, is defined as follows: a teacher communicates with his students through (overt) behavior; he shows awareness of what the students are doing and what goes on in the classroom. He has the proverbial eyes in the back of his head.

Overlapping and withitness are the key concepts in teaching as parallel processing. Overlapping, meaning carrying out the processes of instruction and classroom management, is a synonymous concept for "parallel processing." Withitness is another process; through withitness behavior the teacher shows he knows what goes on in the class. Withitness behavior can take different forms: as a preventive action, as a disciplinary action, or as an instructional action. The form of action chosen depends on the situation and the teacher; in choosing and carrying out an action, a teacher shows he is withit.

Kounin (1970) mentions different kinds of management techniques. In fact, he also mentions "overlapping" and "withitness" as techniques; given the framework just outlined, this is not our opinion. The other techniques are: *movement management*, *group focus*, and *variation*. Each of these techniques can be seen as preventive and disciplinary actions. Through these techniques, for example, a teacher shows he is able to overlap and be withit. The techniques are observable; overlapping and withitness are derivable. The choice for a particular technique should be a real choice, meaning that this choice is difficult to formulate in some kind of rule (if...then...). A similar teacher action may occur in response to different conditions; likewise a particular condition can give rise to different teacher actions. *Each teacher action, therefore, is based on an evaluation of alternative actions.*

4 Experimental and Developmental Studies

In the preceding section we outlined a theory of teaching in which "overlapping" and "withitness" are key concepts. The following section presents a number of studies elaborating on this theoretical outline. First, we will present a study into the validity of the relationship between the two key concepts. Second, we will briefly describe how a training program based on the theoretical outline was developed, and, finally, present two studies into the effects of this training program.

Overlapping and withitness

As indicated in the previous section, overlapping and withitness are the two key concepts of teaching and classroom management. Only one of these concepts received experimental attention. Irving and Martin (1982; see also Kalaidzis, 1980) tried unsuccessfully to replicate Kounin's research with respect to withitness and its significant relationship with student desk work. In fact, they reached significantly different results (see Table 2).

Based on their results, Irving and Martin (1982) came to call "withitness" the confusing variable. We find it an understatement to call withitness a confusing variable; both overlapping and withitness are confusing. When teaching is the parallel processing of information (overlapping), then withitness is its visible counterpart. This means that teachers who are not good at overlapping are also not good at withitness.

Method

Subjects. Seven math teachers (8th grade) voluntarily participated in this study.

Procedure. Six trained observers visited six lessons of the participating teachers. They observed five lesson periods of five minutes, and after each five-minute period they rated the teacher on a five-point scale for his behavior in overlapping and withitness. Each of these variables was a high-inference measure.

Results

Table 3 shows the mean scores for overlapping and withitness for each of the seven teachers.

Table 2
Results of Kounin and Irving and Martin compared for the correlation between withitness and decreasing deviant behavior and increasing task involvement.

type of behavior	withitness Kounin*	Irving & Martin**	z-score of the difference
deviant behavior	.531	-.329	2.74 ($p < .01$)
task involvement	.615	-.352	2.94 ($p < .01$)

*n=49; **n=14

Table 3
Mean overlapping and withitness scores based on
thirty lesson fragments of five minutes.

	Overlapping	Withitness
teacher 1	1.13	1.30
teacher 2	1.08	1.20
teacher 3	1.68	1.46
teacher 4	1.43	1.63
teacher 5	1.68	1.58
teacher 6	1.76	1.62
teacher 7	1.67	1.67

The standard deviation is .28 for the overlapping scores, and .18 for the withitness scores. For both behaviors, two teachers (1 and 2) have a score that lies one standard deviation below the average; one teacher scores average on both scores, and the rest score at the high end of mean plus one standard deviation. The pearson correlation between overlapping and withitness is $r = .85$ ($t_5 = 3.60$, $p < .01$).

Discussion

The results of this study show that overlapping and withitness are correlated concepts, meaning that when a teacher is able to overlap, he is also able to be withit. This does not say anything about a possible causal relationship between the two concepts. It is in line with the model of parallel teaching to assume the following causal relationship: A teacher who is able to overlap, meaning he can process two parallel processes, is also able to demonstrate this to his students by his behavior. Contrarily, a teacher who is not able to deal with two processes at the same time will also demonstrate this by his behavior; he is either fixed on instruction (transfer of knowledge) or on classroom management (especially disci-

pline). These causal relationships have to be investigated further.

A teacher training program on classroom management

There are several alternative approaches to teacher training. One approach is to focus on instruction (instructional strategies, for example; we will not elaborate on these in this paper), selecting an action and executing an action. The latter two cover the area of classroom management (and management of instructional tasks). Focusing on classroom management, we see two possibilities; one, to focus on "selection of action," and two, in addition to selecting, to focus on "execution of actions." In the first approach, the emphasis is on extending the repertoire of actions, whereas the second emphasizes practice (for example, as in microteaching). The first approach is chosen in this paper; the emphasis is on "conceptual understanding" (Gliessman, 1985). In this way it becomes possible to address the "deliberate choice to implement a specific action" (Clark & Peterson, 1986).

Design of the training program

Classroom management training is part

of a larger training program, but the focus here is on just this part of it. The training design is based on some of the results of the Dutch Classroom Environment Study - correlational phase, an IEA-study, in the Netherlands carried out by Tomic (1985). In this correlational study, teacher classroom behavior and student learning outcomes were correlated (cognitive and affective) - see Table 4.

Table 4 shows negative correlations between classroom management and learning outcomes, but does not give any further indications for training than that classroom management negatively influences students' learning outcomes. Emphasis must be laid upon the prevention of classroom disorders. We have formulated "rules" for teachers based on an interpretation of Kounin, which reads as follows: Teachers should perform

Table 4
Correlation coefficients between affective and cognitive learning outcomes and management behavior.

teacher behavior	affective outcome	cognitive outcome
control and discipline	-.09	-.54
non-academic interactions	-.25	-.56
management in general	-.26	-.69
discipline remarks (class)	-.19	-.59
discipline remarks (student)	.06	-.53

two parallel tasks, instruction and management. The teacher constantly watches the class for activities that might affect the ongoing lesson (instruction). We label this parallel activity *overlapping*. When the teacher "identifies" elements that might disturb instruction, he must act. Through his activity he shows he is *withit*. To show *withitness* a teacher can use the following techniques: - look at a student or mention his/her name; - rebuke a student (the right student at the right moment); - propose an alternative behavior (e.g., call the student to the blackboard); - let the student describe the desired behavior (ask what he is doing and what he is supposed to do).

A teacher should *focus on the group* and not on individual students. He must hold the attention of the group. If he cannot, he might for example, call on students in *turns*, or *give pay attention signals* to the group

("This is important," "This will be part of the test next week").

Further, the students should be aware of their responsibility for what goes on in a lesson. The teacher should stimulate their learning process through *student accountability*. He can: -ask goal-directed questions ("Jim, how far are you?"); -check work ("Who has not finished assignment 5?"); -have students answer other students' questions.

A lesson requires a *continuous signal*, a continuous stream of class activities, no abrupt changes and transitions, and a more or less constant pace.

Comparison of classroom management behavior before and after training *Method*

Subjects. Ten mathematics teachers using the same textbook in the 8th grade voluntarily participated in the experiment. During

the course of the experiment one teacher got ill, and his data were excluded from analysis. All teachers were male, and their mean teaching experience was 11.3 years (standard deviation 6.2).

Training on classroom management. The training on classroom management was part of a larger, one day training program which emphasized conceptual understanding and sharing of experiences among the participating teachers. The part dealing with classroom management took about 3 hours. All recommendations were also compiled in a manual, together with a scientific validation of each recommendation.

Observers. Trained observers observed the lessons of the teachers.

Observation instrument. The observers were trained to use the observation instrument TOOL-W, an instrument implemented in the TOOL-system (Van der Sijde & Dirksen, 1989), containing eight codes for classroom management behavior.

Procedure. In the period March-April 1986, the observation data of all teachers were collected by six trained observers (two lessons a week). The teachers then attended a one-day training course, after which they were observed again for another six lessons. Seventeen lessons were observed by two observers in order to assess interobserver agreement.

Results

Interobserver agreement. Seventeen lessons were observed by two observers, and the mean kappa (Cohen, 1962) for classroom management was: kappa = .73.

Classroom management. Table 5 reviews the scores for classroom management on a number of Kounin variables.

Further, the non-interfering classroom management behavior (behavior of the teacher that does not noticeably affect the lesson for all students) increased from 4.98 to 6.69 ($t_{16}=1.46$; $p<.10$), while the behavior which did interfere remained unchanged (before, 1.64; afterwards, 1.38; $t_{16}=.79$, $p>.10$). Table 6 shows the increase in non-interfering behavior for each teacher; from this table it appears that 4 out of 9 teachers showed an increase of more than one standard deviation for this type of behavior.

Discussion

The results depicted in Table 5 might lead to the conclusion that training hardly affected the teachers' behavior, neither for withitness, nor for other behavior. To begin, we believe we have the same problem that Irving and Martin (1982) had, namely: how do we define withitness? In this study a very strict definition is used: withitness is composed of several behaviors of the teacher: directing his gaze towards the class,

Table 5
Mean scores for classroom management behavior

	M	s	M	s	E
	1	1	2	2	
withitness	.02	2.4	.16	2.4	.06
group alerting	-.02	1.4	-.06	1.2	-.01
student accountability	-.00	1.0	-.02	1.0	-.02

M=mean; s=standard deviation; E=effect size

Table 6
The increase in non-interfering classroom management behavior for each teacher.

	before training	after training	
teacher 1	4.40	7.83	*
teacher 2	6.85	2.38	
teacher 3	4.30	6.12	
teacher 4	3.60	7.82	*
teacher 5	3.47	7.06	*
teacher 6	4.69	5.80	
teacher 7	10.93	10.70	
teacher 8	4.47	7.17	*
teacher 9	2.13	5.30	

* increase of more than one standard deviation

walking through the classroom, rebuking a student, looking at a student, having students describe what they have to do. For example, when his look is directed not towards the class but elsewhere, it is scored negatively. So in this study, the scores are "corrected" for what is called the right direction. Perhaps this was not a good choice, but it was the choice that was made. Nevertheless, an effect is visible on non-interfering classroom management behavior, namely: this type of behavior increased. This behavior could also be characterized as prevention of classroom disorders. Not only does it have an overall effect, but it is also visible in the scores of the individual teachers: four out of five did implement this type of behavior (taking Gage's one standard deviation as an indication). The training did have an effect, but one might wonder why it only affected the preventive classroom management behavior and not the curative behavior (or disciplinary actions). We think this lies in the fact that although the teacher was trained, his students were not; they "remained un-

changed" and behaved in the classroom as they were used to behaving. The teacher therefore continues to use his same techniques (or disciplinary actions), less often perhaps, but certainly not significantly less often. With respect to prevention, a different situation arises: a teacher can experiment with these techniques, and that is what the results show.

Comparing the classroom management behavior of two groups of teachers *Method*

Subjects. Two groups of mathematics teachers (8th grade) voluntarily participated in this study. Group one was composed of 13 teachers and group two of 8 teachers.

Procedure. The teachers in group one participated in the training in September 1986, and were observed for 10 consecutive lessons till December. The teachers in group two were observed for 10 lessons in the period September-December and participated in the training program after the observation period (in January).

Table 7
Mean scores classroom management behavior for group 1 and 2

	M 1	s 1	M 2	s 2	E
withitness	.26	2.9	-.42	2.0	.34
group alerting	-.05	1.0	.31	1.0	.04
student accountability	.30	1.1	-.04	0.7	.92

M = mean; s = standard deviation; E = effect size

Results

Interobserver agreement. A number of lessons was observed by two observers, and the mean kappa (Cohen, 1962) for classroom management was: kappa = .84.

Classroom management. Table 7 gives the mean scores for the Kounin variables for both groups.

The difference between group one and two is significant on a 10%-level for student accountability: Mann-Whitney $U=26.5$, $p<.10$.

Discussion

The results of the third study show the same overall trend as study two. The only difference between the two groups lies in the disciplinary actions with reference to student accountability. Like the classroom behavior preventing classroom disorders, student accountability, although it is a disciplinary action, can be implemented by the teacher. These kinds of disciplinary actions extend the repertoire of the teacher, and do not change his other classroom behavior.

General Discussion

Training in classroom management behavior is a tedious job. It can be done in many different ways and can be based on different kinds of models. The model sketched in the first sections of this paper,

the model of parallel processing, gives some important indications of how such a training could be designed. From the results of the three reported studies, it appears that we struggled with the same problem as Irving and Martin: "what is withitness?" and "what is overlapping?" Study 1 shows that these concepts are correlated, but the question remains: are they causally connected? If they are, then a teacher who shows he is withit, also shows he can overlap, meaning he is capable of parallel processing. Withitness in this paper has nothing to do with disciplinary actions; it is a choice that was made, and we believe it to be a correct one. Withitness is more than and different from the sum of all disciplinary actions. This might create a problem: how should classroom management behavior be trained? Our response is: by expanding the teacher's repertoire of both disciplinary actions and preventive actions.

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CLASSROOM MANAGEMENT

(Continued from page 481)

given the continuing increase in refugee and immigrant children in metropolitan areas, it could be used to provide assistance to ESL students. Using prospective Education majors to tutor migrant students in need of additional educational assistance is affordable and advantageous for all concerned. The student, the university tutor, the school district, and the university profit from it.

Notes

¹As defined by the amendment to Title I of Public Law 89-10, which established the Migrant Education Program in 1966, a migrant student is one who has moved within the past six years across state or school district lines with a migrant parent or guardian to enable the child, the child's guardian, or a member of the child's

immediate family to obtain temporary or seasonal employment in an agricultural or fishing activity. The child may be in any grade between preschool and grade 12 and must not be above 21 years of age.

²The Portland Migrant Education Project is a component of the nation-wide, federally-funded Migrant Education Program. Its benefits for migrant students include the Migrant Student Record Transfer System (MSRTS), which maintains academic and health information on all migrant students and transmits this information to the new school whenever a migrant student moves. Each child enrolled in MSRTS in the state of Oregon is also covered by accident insurance at no cost to the child's family.

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